Claims

1. A compound of formula (I)

$$Q = N$$

$$Q = N$$

$$R^{2a}$$

$$R^{2a}$$

$$R^{2a}$$

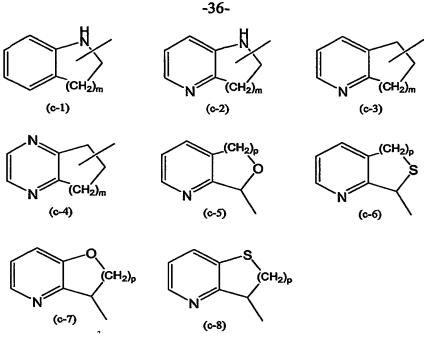
$$R^{2a}$$

$$R^{2a}$$

$$R^{2a}$$

- 5 a prodrug, N-oxide, addition salt, quaternary amine, metal complex or stereochemically isomeric form thereof, wherein
- Q is Ar², C₃₋₇cycloalkyl, or C₁₋₆alkyl substituted with one or more substituents each independently selected from the group consisting of trifluoromethyl, C₃₋₇cycloalkyl, Ar², hydroxy, C₁₋₄alkoxy, C₁₋₄alkylthio, Ar²-oxy-, Ar²-thio-, Ar²(CH₂)_noxy, Ar²(CH₂)_nthio, hydroxycarbonyl, aminocarbonyl, C₁₋₄alkylcarbonyl, C₁₋₄alkoxycarbonyl, Ar²(CH₂)_ncarbonyl, aminocarbonyloxy, C₁₋₄alkylcarbonyloxy, Ar²carbonyloxy, Ar²(CH₂)_ncarbonyloxy, hydroxy-C₂₋₄-alkyloxy, C₁₋₄alkoxycarbonyl(CH₂)_noxy, mono- or di(C₁₋₄alkyl)aminocarbonyl, mono- or di(C₁₋₄alkyl)aminocarbonyloxy, aminosulfonyl, mono- or di(C₁₋₄alkyl)aminosulfonyl, dioxolanyl optionally substituted with one or two C₁₋₆alkyl radicals, and a heterocycle selected from the group consisting of pyrrolidinyl, pyrrolyl, dihydropyrrolyl, indolyl, imidazolyl, triazolyl, piperidinyl, homopiperidinyl, piperazinyl, pyridyl and tetrahydropyridyl, wherein each of said heterocycle may optionally be substituted with oxo or C₁₋₆alkyl;
- G is a direct bond or C₁₋₁₀alkanediyl optionally substituted with one or more substituents individually selected from the group consisting of hydroxy, C₁₋₆alkyloxy, Ar¹C₁₋₆alkyloxy, C₁₋₆alkylthio, Ar¹C₁₋₆alkylthio, HO(-CH₂-CH₂-O)_n-, C₁₋₆alkyloxy(-CH₂-CH₂-O)_n- and Ar¹C₁₋₆alkyloxy(-CH₂-CH₂-O)_n-;
- 25 R¹ is Ar¹ or a monocyclic or bicyclic heterocycle being selected from piperidinyl, piperazinyl, pyridyl, pyridzinyl, pyrimidinyl, furanyl, tetrahydrofuranyl, thienyl, pyrrolyl, thiazolyl, oxazolyl, imidazolyl, isothiazolyl, pyrazolyl, isoxazolyl, oxadiazolyl, quinolinyl, quinoxalinyl, benzofuranyl, benzothienyl, benzimidazolyl, benzoxazolyl, benzthiazolyl, pyridopyridyl, naphthiridinyl, 1*H*-imidazo[4,5-b]pyridinyl, 3*H*-imidazo[4,5-b]pyridinyl, imidazo[1,2-a]-pyridinyl, 2.3-dihydro-1,4-dioxino[2,3-b]pyridyl and a radical of formula

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wherein each of said monocyclic or bicyclic heterocycles may optionally be substituted with 1 or where possible more, such as 2, 3, 4 or 5, substituents individually selected from the group of substituents consisting of halo, hydroxy, amino, cyano, carboxyl, C₁₋₆alkyl, C₁₋₆alkyloxy, C₁₋₆alkylthio, C₁₋₆alkyloxyC₁₋₆alkyl, Ar¹, Ar¹C₁₋₆alkyl, Ar¹C₁₋₆alkyloxy, hydroxyC₁₋₆alkyl, mono-or di(C₁₋₆alkyl)amino, mono-or di(C₁₋₆alkyl)aminoC₁₋₆alkyl, polyhaloC₁₋₆alkyl, C₁₋₆alkylcarbonylamino, C₁₋₆alkyl-SO₂-NR^{4a}-, Ar¹-SO₂-NR^{4a}-, C₁₋₆alkyloxycarbonyl, -C(=O)-NR^{4a}R^{4b}, HO(-CH₂-CH₂-O)_n-, halo(-CH₂-CH₂-O)_n-, C₁₋₆alkyloxy(-CH₂-CH₂-O)_n-, Ar¹C₁₋₆alkyloxy(-CH₂-CH₂-O)_n- and mono-or di(C₁₋₆alkyl)amino(-CH₂-CH₂-O)_n-;

each n independently is 1, 2, 3 or 4; one of \mathbb{R}^{2a} and \mathbb{R}^{3a} is \mathbb{C}_{1-6} alkyl and the other one of \mathbb{R}^{2a} and \mathbb{R}^{3a} is hydrogen;

in case R^{2a} is different from hydrogen then R^{2b} is hydrogen or C_{1-6} alkyl, and R^{3b} is hydrogen;

in case R^{3a} is different from hydrogen then R^{3b} is hydrogen or C₁₋₆alkyl, and R^{2b} is hydrogen; or

 R^{2a} , R^{2b} , R^{3a} and R^{3b} all are hydrogen;

 R^{4a} and R^{4b} can be the same or can be different relative to one another, and are each independently hydrogen or $C_{1\text{-}6}$ alkyl; or

20 R^{4a} and R^{4b} taken together may form a bivalent radical of formula -(CH₂)_s-; R⁵ is hydrogen or C₁₋₆alkyl;

m is 1 or 2;

p is 1 or 2;

s is 4 or 5

- Ar^1 is phenyl or phenyl substituted with 1 or more, such as 2, 3 or 4, substituents selected from halo, hydroxy, C_{1-6} alkyl, hydroxy C_{1-6} alkyl, polyhalo C_{1-6} alkyl, and C_{1-6} alkyloxy;
- Ar² is phenyl or phenyl substituted with 1 or more, such as 2, 3 or 4, substituents

 5 selected from the group consisting of halo, hydroxy, amino, cyano, C₁₋₆alkyl,
 hydroxyC₁₋₆alkyl, polyhaloC₁₋₆alkyl, aminoC₁₋₆alkyl, C₁₋₆alkyloxy, aminosulfonyl, aminocarbonyl, hydroxycarbonyl, C₁₋₄alkylcarbonyl, mono- or
 di(C₁₋₄alkyl)amino, mono- or di(C₁₋₄alkyl)aminocarbonyl, mono- or di(C₁₋₄alkyl)aminosulfonyl, mono- or di(C₁₋₄alkyl)aminoC₁₋₆alkyl and C₁₋₄alkoxycarbonyl.

2. A compound according to claim 1 wherein G is C₁₋₁₀alkanediyl.

3. A compound according to claim 1, wherein G is methylene.

- A compound according to any of claims 1 3, wherein R¹ is pyridyl optionally substituted with 1 or 2 substituents independently selected from the group consisting of halo, hydroxy, amino, cyano, carboxyl, C¹-6alkyl, C¹-6alkyloxy, C¹-6alkylthio, C¹-6alkyloxyC¹-6alkyl, Ar¹ Ar¹C¹-6alkyl, Ar¹C¹-6alkyloxy, hydroxyC¹-6alkyl, mono-or di(C¹-6alkyl)amino, mono-or di(C¹-6alkyl)amino-C¹-6alkyl, polyhaloC¹-6alkyl, C¹-6alkylcarbonylamino, C¹-6alkyl-SO²-NR⁴a-, Ar¹-SO²-NR⁴a-, C¹-6alkyloxycarbonyl, -C(=O)-NR⁴aR⁴b, HO(-CH²-CH²-O)n-, halo(-CH²-CH²-O)n-, C¹-6alkyloxy(-CH²-CH²-O)n-, Ar¹C¹-6alkyloxy(-CH²-CH²-O)n- and mono-or di(C¹-6alkyl)amino(-CH²-CH²-O)n-.
- 25 5. A compound according to any of claims 1 3, wherein R¹ is pyridyl substituted with 1 or 2 substituents independently selected from the group consisting of hydroxy and C₁₋₆alkyl.
- A compound according to any of claims 1 3, wherein R¹ is Ar¹, quinolinyl,
 benzimidazolyl, a radical of formula

$$(c-4)$$

or pyrazinyl; wherein each of the radicals Ar¹, quinolinyl, benzimidazolyl, (c-4), or pyrazinyl may optionally be substituted with the substitutents of said radicals as claimed in claim1.

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- 7. A compound according to any of claims 1 3, wherein R¹ is phenyl optionally substituted with one, two or three radicals selected from the group consisting of halo, hydroxy, C₁₋₆alkyl, C₁₋₆alkyloxy; quinolinyl; a radical (c-4) wherein m is 2, optionally substituted with up to two radicals selected from C₁₋₆alkyl; benzimidazolyl optionally substituted with C₁₋₆alkyl; pyrazinyl optionally substituted with up to three radicals selected from C₁₋₆alkyl.
- 8. A compound according to any of claims 1 7, wherein R⁵ is hydrogen.

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- A compound according to any of claims 1 8, wherein Q is Ar², C₃₋₇cycloalkyl, or 10 9. C₁₋₆alkyl optionally substituted with one or two substituents each independently selected from the group consisting of trifluoromethyl, Ar², hydroxy, C₁₋₄alkoxy, C₁₋₄alkylthio, Ar²-oxy-, Ar²(CH₂)_noxy, hydroxycarbonyl, aminocarbonyl, C₁₋₄alkylcarbonyl, Ar²carbonyl, C₁₋₄alkoxycarbonyl, C₁₋₄alkylcarbonyloxy, 15 hydroxy-C₂₋₄-alkyloxy, mono- or di(C₁₋₄alkyl)-aminocarbonyl, dioxolanyl optionally substituted with one or two C₁₋₆alkyl radicals, and a heterocycle selected from the group consisting of pyrrolidinyl, pyrrolyl, dihydropyrrolyl, indolyl, imidazolyl, triazolyl, piperidinyl, homopiperidinyl, piperazinyl, pyridyl and tetrahydropyridyl, wherein each of said heterocycle may optionally be 20 substituted with up to two substituents independently selected from oxo and C₁₋₆alkyl.
 - 10. A compound according to any of claims 1 8, wherein Q is Ar², C₃₋₇cycloalkyl, or C₁₋₆alkyl optionally substituted with one or two substituents each independently selected from the group consisting of Ar², hydroxy, C₁₋₄alkoxy, C₁₋₄alkylthio, aminocarbonyl, C₁₋₄alkoxycarbonyl, hydroxy-C₂₋₄-alkyloxy, dioxolanyl substituted with two C₁₋₆alkyl radicals, and a heterocycle selected from the group consisting of pyrrolidinyl, indolyl, imidazolyl, piperidinyl, piperazinyl, and pyridyl, wherein each of said heterocycle may optionally be substituted with up to two substituents independently selected from oxo and C₁₋₆alkyl.
- 11. A compound according to any of claims 1 8, wherein Q is Ar², C₃-7cycloalkyl, or C¹-6alkyl optionally substituted with Ar², with one or two hydroxyl groups, with C¹-4alkoxy, C¹-4alkylthio, aminocarbonyl, C¹-4alkoxycarbonyl, hydroxy-C₂-4alkyloxy, dioxolanyl substituted with two C¹-6alkyl radicals, or a heterocycle selected from pyrrolidinyl, indolyl, imidazolyl, piperidinyl, piperazinyl, and pyridyl, wherein each of said heterocycle may optionally be substituted with two substituents independently selected from oxo and C¹-6alkyl.

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A compound according to any of claims 9 - 11, wherein Ar² is phenyl or phenyl substituted with 1, 2 or 3 substituents from halo, hydroxy, amino, cyano, hydroxyC₁₋₆alkyl, aminoC₁₋₆alkyl, C₁₋₆alkyloxy and aminosulfonyl.

5 A compound according to any of claims 9 - 11, wherein Ar² is phenyl or phenyl

substituted with 1 or 2 substituents selected from amino, cyano, hydroxyC₁₋₆alkyl,

aminoC₁₋₆alkyl and aminosulfonyl,

A compound according to any of claims 9 - 11, wherein one of R^{2a} and R^{3a} is 10 C₁₋₆alkyl and the other one of R^{2a} and R^{3a} is hydrogen; in case R^{2a} is different from hydrogen then R^{2b} is C₁₋₆alkyl, and R^{3b} is hydrogen; in case R^{3a} is different from hydrogen then R^{3b} is $C_{1\text{-}6}$ alkyl, and R^{2b} is hydrogen.

- 15 15. A compound as claimed in any one of claims 1 to 14 for use as a medicine.
 - A pharmaceutical composition comprising a pharmaceutically acceptable carrier, and as active ingredient a therapeutically effective amount of a compound as claimed in any one of claims 1 to 14.

17. A process for preparing a pharmaceutical composition as claimed in claim 16, said process comprising intimately mixing a pharmaceutically acceptable carrier with a therapeutically effective amount of a compound as claimed in any one of claims 1 to 16.

The use of a compound as claimed in any of claims 1 to 14 for the manufacture of a medicament for inhibiting RSV replication.

19. A process for preparing a compound as claimed in any of claims 1 to 14, said 30 process comprising

> (a) reacting an intermediate of formula (II) with a reagent (III) as in the following reaction scheme:

$$W \xrightarrow{R^{2b}} R^{3a} \qquad Q \xrightarrow{NH} \qquad R^{5} \qquad R^{5} \qquad R^{5} \qquad R^{5} \qquad R^{3a} \qquad Q \xrightarrow{NH} \qquad R^{5} \qquad R^{3a} \qquad Q \xrightarrow{N} \qquad R^{5} \qquad$$

(b) reacting an intermediate of formula (IV) with a reagent (V) as in the following reaction scheme:

$$Q = N$$

$$R^{5}$$

$$R^{3a}$$

$$R^{1}$$

$$R^{3a}$$

$$R^{1}$$

$$R^{3a}$$

$$R^{5}$$

$$R^{3a}$$

$$R^{3a$$

wherein Q, G, R¹, R^{2a}, R^{2b}, R^{3a}, R^{3b}, R⁵ are as claimed in any of claims 1 to 16; and optionally converting the thus obtained compounds of formula (I) into their pharmaceutically acceptable base-addition or acid addition salt form by treatment with a suitable base or acid and conversely treating the base-addition or acid addition salt form with an acid or a base to obtain the free form of the compound of formula (I).